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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,228	12/31/2003	Jang-hyoun Youm	1572.1225	7133
21171	7590	08/23/2005	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			HIRUY, ELIAS	
			ART UNIT	PAPER NUMBER
			2837	

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/748,228

Applicant(s)

YOUM, JANG-HYOUN

Examiner

Elias B. Hiruy

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,7,10-14,17,20,23,25-27,32 and 35 is/are rejected.
- 7) ☒ Claim(s) 2,3,5,6,8,9,15,16,18,19,21,22,24,28-31,33 and 34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

**Response to Argument**

1. Applicant's amendment and argument filed on 04/27/05 are received and entered into record.
2. The drawing objection is withdrawn as a replacement sheet has been received.
3. The objection to the specification is maintained as the specification still bares some typos and grammatical mistakes. The following are some examples:

- On page 10 line 13 applicant states "...terminals 80a an 80b; and..." The word and is misspelled as "an." Correction is required.
- Paragraph 2 page 1 is a run on sentence.

The applicant is recommended to further inspect the spec to make sure all typos and grammatical problems are resolved.

4. Claim 1-35 objection is withdraw since the claims are amended in a manner that was suggested in the earlier office action.
5. Claims 1, 4-12, 14-15, 17-22, 28-29, and 31-32 objection are withdrawn as the applicant has corrected the indicated discrepancy.
6. Claims 1 and 26 rejection based on 35 U.S.C 112 2<sup>nd</sup> paragraph is withdrawn as this claim 1 has been amended to eliminate the indicated problem and claim 26 is cancelled from further consideration.
7. Regarding claim 1, 11,12, and 14 the applicant response has been fully considered, but was not found to be persuasive. The applicant cites a difference between specification of the prior art and the specification of the present application.

Art Unit: 2837

Applicant is reminded that even though the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re van Geuns*, 988 F. 2d 1181, 26 USPQ2D 1057 (Fed. Cir. 1993). Thus, the claims as claimed are not patentably distinguishable from the prior art and have failed to overcome the rejection set forth in the earlier office action. For clarity purpose, the rejection is recited below in the appropriate rejection section.

8. Regarding claim 4 and 17 the applicant response has been fully considered, but was not found to be persuasive. As a result, the rejection is maintained. Murty et al shows in the motoring mode how the controller controls the breaking switch that meets the claim limitation of claim 4 and 17. applicant attention is further directed to (Col 6 lines 40-52) for further illustration. For clarity purpose, the rejection is recited below in the appropriate rejection section.

9. Regarding claim 7, 10, and 20 the applicant response has been fully considered, but was found to be unpersuasive. As a result, the rejection is maintained. Murty et al shows a relay that meets the limitations of the above claims. Here is a direct quote from Murty et al disclosure:

*"...Obviously, the mode switching transistors 22 and 24 may be replaced with an electromagnetic relay or other switching device.."*

For clarity purpose the rejection is recited below in the appropriated rejection section.

10. Regarding claim 13 and 23 the applicant depends on the independent claim patentability and does not argue the merit of the claims. As such, the earlier rejection is

Art Unit: 2837

maintained . For clarity purpose the rejection is recited below in the appropriate rejection section.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1, 4, 10, 11, 12, 14, 17, 25, 26, 27 and 32 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Murty et al U.S. Patent No 5,291,106.

Murty et al shows a control system that shows all the claimed elements in this application. Regarding claim 1, 11, 12, and 14, Murty et al invention has a motor power supply that has a DC power supply (figure 1 label 20) having a pair of power supply terminals the (+) and (-) terminals as shown on figure 1, an inverter (figure 1 label 29) having a pair of connection terminals, (DC+) and circuit ground, connected to the power supply with a first additional line to receive power from the DC power supply and supplying AC power to the motor (figure 1 label 11). Further, Murty et al shows a second additional line that contains a braking resistor (figure 1 label 26) and a control switch (figure 1 label 24) connected in series to connect the two connections of the inverter. The braking switch (figure 1 label 22) is disposed to one of the connection terminals to connect the one of the connection terminals to a corresponding power supply terminal (column 5 lines 27-33 and column 6 lines 11-16), or a braking position

Art Unit: 2837

connecting the one of the connection terminals to the second additional line (column 5 lines 33-39 and lines 55-64; column 6 lines 54-68).

In addition, Murty et al invention has means to detect the motor speed of the motor(column 4 lines 59-68) based on signals H1-H3, and a system controller controlling the breaking switch to switch to the breaking position. The system controller (figure 1 label 40), using the mod switch driver, controls the control switching element so that an on-off interval of the control switching element is controllable depending on the speed detected by the motor speed detector, when the motor is in a controlled breaking mode (i.e. dynamic braking mode) (column 5 lines 33-39 and lines 55-64).

Regarding claim 4 and 17, Murty et al teaches how the controller controls the breaking switch to switch to the normal position when the motor is in a driving mode (column 5 lines 28-39).

In regards to claim 7, 10, and 20, Murty et al teaches that the transistor gates could alternatively be replaced by electromagnetic relays (column 7 lines 57-61).

With respect to claim 25, Murty et al invention uses MOS transistor (figure 1 labels 22 and 24) or field effect transistor, which is switch able depending on a gate input signal. Further, the controller controls the gate input signal to the switching element so as to turn on or turn off the switching element to change an interval between a turning on and a turning off the switching element (figure 1, 24 and 22).

Regarding claim 27, Murty et al shows while the motor is in a driving mode, rotational energy stored by the motor regenerates in the DC supply unit through the inverter (column 6 lines 54-68 and column 7 lines 17-27).

Art Unit: 2837

Regarding claim 32, Murty et al teaches when a portion of the current flowing in the motor flows through a diode of the inverter the breaking resistor resulting in a shortening of the power connection terminals of the motor(column 5, lines 65-68 and column 6 lines 1-11).

Regarding claim 35, Murty et al shows a three phase motor (i.e. a multi-phase motor).

**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claims 13 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murty et al U.S. Patent No 5,291,106 as applied to claim 12 above, and further in view of Jahkonen U.S. Patent No 6,452,357.

In regards to claim 13, Murty et al teaches about an apparatus that meets all the limitations of claim 12.

Regarding claim 13 and 26, Murty et al shows how the motor controller(40) detects and determines the motor speed based on signals H1-H3 (column 4 lines 59-63). However, Murty et al fails to disclose an encoder that is used to code an angle of a rotation position of the motor and calculate a rotational position and a speed of the motor based on an encoded signal to provide the control part the information gathered.

Nevertheless, Jahkonen discloses an encoder (figure 3 label Encoder or Revolver and column 2 lines 60-65) that is used to code an angle of a rotation position of the motor and calculate a rotational position and a speed of the motor based on an encoded signal to provide the controller part the information gathered.

Thus, it would have been obvious for one having ordinary skill in the art at the time the invention was made to incorporate the encoder of Jahkonen into Murty et al invention either independently or integrated with the controller (40). The motivation being that the method would allow for a robust and fast response since the motor controller would be provided with a precise feedback regarding the motor condition.

13. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murty et al U.S. Patent No 5,291,106 as applied to claim 14 above, and further in view of Sekiguchi et al Pub. No US2002/0051371 A1.

In regards to claim 23, Murty et al teaches about an apparatus that meets all the limitations of claim 14.



However, Murty et al fails to disclose an inrush-current protection circuit to prevent an inrush-current from being generated on an initial supply of power to the DC supply unit.

Sekiguchi et al teaches about an inrush-current protection circuit (Abstract lines 1-4) to prevent an inrush-current from being generated on an initial supply of power to the DC supply unit.

Thus, it would have been obvious for one having ordinary skill in the art at the time the invention was made to incorporate the inrush-current protection circuit of Sekiguchi et al invention into Murty et al invention. The motivation being that the method inhibits an inrush current from flowing into a smoothing circuit when the power is turned on.

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

**Allowable Subject Matter**

15. Claims 2-3, 5-6, 8-9, 15-16, 18-19, 21-22, 24, 28-31, 33-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Remarks**

16. No claim is allowed.

**Conclusion**

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Further prior arts that were found during an updated search are listed on the PTO-892 form attached.

**Correspondence**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elias B. Hiruy whose telephone number is 571-272-6105. The examiner can normally be reached on 7AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2837

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EH



DAVID MARTIN  
SUPERVISOR, PATENT EXAMINER  
TECHNOLOGY CENTER 2800